

Index to Volume II.

1902-1903.

MARCH, 1902, TO APRIL, 1903.

A

Accelerated Motion, A Diagram Illustrating. HERMAN D. STEARNS.....	334
Accelerated Motion, Some Improvements in Apparatus for. E. E. BURNS.....	286
Agricuture, Elements of in the High School Course. RICHARD RUNKE.....	282
Amoebae, A Method for Collecting. S. O. MAST.....	407
Aquarium Cement, Formula for. S. O. MAST.....	128
Arc Lights, The Singing and Speaking. K. E. GUTHE.....	209
ASHMAN, GEORGE C. A Method of Determining the Relative Amounts of Oxygen and Nitrogen in the Atmosphere.....	155
Astronomy, Elementary Experiments in Observational. GEORGE W. MYERS.....	35, 107, 169, 223, 288
Atmosphere, A Method of Determining the Relative Amounts of Oxygen and Nitrogen in the Air. GEORGE C. ASHMAN.....	155
Atomizer, A Simple. L. MURBACH.....	358
Auxanometer, A Simple. L. MURBACH.....	346

B

Baking Powders, Examination of. WARREN RUFUS SMITH.....	342
Balance Details. E. C. WOODRUFF.....	29
BARNES, C. R. Plant Physiology in the High School.....	320
BARROWS, FRANKLIN W. Biology in American Colleges—Its Methods and Objects.....	19, 82
BEEBE, S. P. Formation of Sulphur Dioxide for Laboratory Students.....	115
BIGELOW, M. A. The European Edible Snail.....	405
Biological Laboratory, Plans for a. S. O. MAST.....	166
Biology in American Colleges—Its Methods and Objects. FRANKLIN W. BARROWS.....	19, 82
Boiling Point, An Experiment Showing the Relationship Between Pressure and. C. E. LINEBARGER.....	156
BOOK REVIEWS. Alembic Club Reprint, No. 16; Ladenburg's Lectures on the Development of Chemistry since the Time of Lavoisier, 539; Animal Activities, N. S. French; Elementary Plant Physiology, D. T. MacDougal, 182; Essentials of Chemistry, John C. Hessler and Albert L. Smith, 360; Guide to Preparation Work in Inorganic Chemistry; Reinhard Blochman, translated by Jas. Lewis Howe, 416; Laboratory Outline of General Chemistry, Alexander Smith, 416; Laboratory Manual in Elementary Biology, Frederick DeForest Heald, 238; Laboratory Exercises in Elementary Physics, Franklin H. Ayres, 181; Invertebrate Zoology, H. S. Pratt, 117; Nature Study for Grammar Grades, W. S. Jackman, 539; Outlines of Botany for the High School Laboratory and Class Room, R. G. Leavitt, 238; Physiology by the Laboratory Method, Wm. J. Brinckley, 361; The Science of Mechanics, Ernst Mach, translated by T. J. McCormack, 362; Suggestions for Pro-	

- gressive and Correlative Nature Study, G. W. Carver, 240; Supplementary Readings in Physics, J. A. Culler, 48; The Teaching of Chemistry and Physics, Alexander Smith and Edwin H. Hall, 336; University Textbook of Botany, D. H. Campbell, 238.
- Botany, High School. V. A. SUYDAM.....435, 500
- Botany. Notes on the Study of Seeds. GILBERT H. TRAFTON..... 237
- Botany, A Standard College Entrance Option in..... 159
- BROWN, MARION R. The History of Zoology Teaching in the Secondary Schools of the United States.....201, 256
- BROWNELL, HERBERT. Science Teaching for the High School.....251
- BURCHARD, ERNEST F. The Volumetric Synthesis of Water as a Practical Quantitative Lecture Experiment..... 460

C

- CAPLIN, JESSIE F. Per Cent of Nitrogen in Air; To Show that Oxidation Means Increase in Weight..... 302
- CARHART, HENRY S. Revision of Physical Theory..... 371
- CASE, E. C. Another Heliotrope..... 101
- Chemistry in Education. C. L. SPEYERS.....70, 133
- Chemistry, Notes on the Progress of. LYMAN C. NEWELL..... 229
- Chemistry, The Planting of, in America. RUFUS PHILLIPS WILLIAMS.....75, 139
- Circulation of the Blood. W. H. MANWARING..... 28
- Cocoanut—Its Composition and Germination. J. E. KIRKWOOD..... 401
- Composition of Forces, Details of an Experiment in. W. C. HAWTHORNE..... 26
- COOPER, HERMON C. The Lime Water Test for Carbon Dioxide..... 302
- Corn or Glucose Syrups. EDWARD GUDEMAN..... 22
- CORNISH, R. H. Matter and Method in Physics Teaching.....327, 387
- CORRESPONDENCE250, 369, 428, 486, 545
- Courses in Chemistry and Physics in New York High Schools. M. D. SOHON.... 419
- CURTIS, HARVEY L. The Use of the Jolly Balance in Calorimetry Experiments... 337

D

- Decadence of the Vulgar Fraction. RUFUS P. WILLIAMS..... 41
- Decimal Coinage, How Uncle Sam Got a. WILLIAM H. SEAMAN.....232, 292
- DENNIS, L. M. What of Chemistry Shall Be Taught in the High School, and How Shall It Be Most Effectually Taught?..... 546
- Determination for the Weight of a Liter of Air, The. C. E. LINEBARGER..... 457
- DEWAR, JAMES. Liquid Hydrogen and Helium, 311; Various Low Temperature Researches 438
- DICK, M. E. Electrolysis of a Salt 536
- DISCUSSION OF QUESTIONS..... 191

E

- Earth's Magnetic Field, A Simple Method of Measuring. HERMAN D. STEARNS... 527
- Electrolytic Dissociation, The Theory of. LOUIS KAHLENBERG..... 395
- ELLIS, GRACE F. Physiology as a Science Study in the High School..... 273
- Engineer, The Preliminary Education of the. JOHN PERRY..... 265
- Examination and the Examinee in Elementary Science, The. JOHN WADDELL.... 515
- Experimental Illustration of Osmotic Pressure, An. C. F. ADAMS..... 522
- EWING, A. L. A Falling Body Machine 168
- Experiment in Resolution of Forces, An. E. C. WOODRUFF..... 523

F

- Falling Body Machine, A. A. L. EWING..... 168
- Feeding Habits of Fishes, The. C. JUDSON HERRICK..... 324
- FOSTER, F. H. A Method of Determining the Value of Gravity..... 459

G

GANONG, W. F. Plant Physiology for the High School.....	429
GARNER, JESSE H. Magnetic Phantoms.....	103
Geologist, The Training and Work of a. C. R. VAN HISE.....	505
GEORGE, GEORGE. A Combined Filter Funnel and Beaker.....	343
GRAY, ARTHUR W. Polarization of a Galvanic Cell.....	217
GUDEMAN, EDWARD. Corn or Glucose Syrups.....	22
GUTHE, K. E. The Singing and Speaking Arcs.....	209

H

HALL, EDWIN H. The American Physics Teacher's Opportunity.....	57
HALL, WINFIELD S. The Relation of Physics to Medicine.....	443
HARMON, H. W. Weather Work in the Schools.....	45
HAWKES, W. H. A Simple Method of Purifying Mercury.....	215
HAWTHORNE, W. C. Details of an Experiment in Composition of Forces.....	26
Heliotrope, Another. E. C. CASE.....	101
Herbarium, Shall the Preparation of a, and the Identification of Species form a Part of the Required Work in our Secondary Schools? GILBERT H. TRAFTON.....	89, 148
HERRICK, C. JUDSON. The Feeding Habits of Fishes.....	324
High School Botany. V. A. SUYDAM.....	435, 500
History of Zoology Teaching in the Secondary Schools of the United States, The. MARION R. BROWN.....	201

J

Jolly Balance, The Use of the, in Calorimetry Experiments. HARVEY L. CURTIS....	337
---	-----

K

KIRKWOOD, J. E. The Cöcoanut—Its Composition and Germination.....	402
---	-----

L

Laboratory Material for General Biology. A. J. GROUT.....	220
Laboratory Work in Physical Geography. A. C. NORRIS.....	520
LE MAY, JOHN. A Spectrometer.....	32
LINEBARGER, C. E. The Determination of the Weight of a Liter of Air, 45; An Experiment Showing the Relationship Between Pressure and Boiling Point, 156; A Demonstration of Vapor Tension at Ordinary Temperature.....	175
Liquid Hydrogen and Helium. JAMES DEWAR.....	311
Low-Temperature Researches. JAMES DEWAR.....	438

M

Magnetic Phantoms. JESSE H. GARNER.....	103
MANWARING, W. H. Alcohol a Food, 127; The Circulation of the Blood, 28; The Duty of the University to the Secondary School Teacher of Physiology and Hygiene, 153; Tuberculous Sputum in Public Streets.....	408
MAST, S. O. A Method of Collecting Amæbæ, 407; Formula for Aquarium Cement, 128; Plans for a Biological Laboratory.....	166
Medicine, The Relation of Physics to. WINFIELD S. HALL.....	443
Mercury, A Simple Method of Purifying. W. H. HAWKES.....	215
Method of Determining the Value of Gravity, A. F. H. FOSTER.....	459
Method in Science Teaching. LOUIS MURBACH.....	12
METROLOGY. The Recent Metric Bill, Rufus P. Williams, 529; System in Metric Weights and Measures, 411, 464; How Uncle Sam Got a Decimal Coinage, William H. Seaman, 233; The National Bureau of Standards, Rufus P. Williams, 111, 175; Decadence of the Vulgar Fraction, Rufus P. Will- iams, 41; Teaching of the Metric System, Wm. F. White, 350; Action of Mechanical Engineers on the Metric System, 534; Colonial Premiers Recom-	

- mend the Metric System, 236; For and Against the Metric Bill, 177; The Metric Movement in Congress, 43; Literature on Weights and Measures, 298; La Convention du Metre et le Bureau Internationale des Poids et Mesures 298
- Mounting for an Oscillating Mirror, A. E. C. WOODRUFF..... 94
- MURBACH, LOUIS. A Simple Atomizer, 346; A Simple Auxanometer, 358; Method in Science Teaching 12
- MYERS, GEORGE W. Elementary Experiments in Observational Astronomy..... 35, 107, 169, 223, 288

N

- NEWELL, LYMAN C. Notes on the Progress of Chemistry, 229; Preparation and Training of the Teacher of Chemistry, 487; Professor Remsen on the Teaching of Science 129
- Nitrogen in Nitric Acid, A Simple Proof of. OLIVER P. WATTS..... 115
- NORRIS, A. C. Laboratory Work in Physical Geography, 520; The Science Teacher as a Public Benefactor..... 199
- NORTON, WILLIAM HARMON. The Teaching of Science..... 193
- NOTES. Biology, 299, 357; Botany, 44, 179, 469; Chemistry, 114, 301, 359, 536; Geology, 45, 537; Physics, 179, 537; Physiology, 180, 414.

O

- Osmotic Pressure, An Experimental Illustration of. C. F. ADAMS..... 522

P

- PATTERSON, J. W. Pupin's Invention..... 279
- PEPOON, H. S. An Instructive Seed Experiment..... 179
- PERRY, JOHN. The Preliminary Education of the Engineer..... 264
- Physical Theory, Revision of. HENRY S. CAHART..... 371
- Physics Teacher's Opportunity, The American. EDWIN H. HAUL..... 57
- Physics Teaching, Matter and Method in. R. H. CORNISH..... 327, 387
- Physiology as a Science Study in the High School. GRACE F. ELLIS..... 273
- Plant Physiology for the High School. W. F. GANONG..... 429
- Plant Physiology in the High School. C. R. BARNES..... 320
- Polarization of a Galvanic Cell. ARTHUR W. GRAY..... 217
- Preparation and Training of the Teacher of Chemistry. LYMAN C. NEWELL..... 487
- Pressure and Boiling Point, An Apparatus for Determining the Relation Between. N. F. SMITH..... 339
- Pupin's Invention. J. W. PATTERSON..... 279

R

- Remsen, Professor—on the Teaching of Science. LYMAN C. NEWELL..... 129
- REPORTS OF MEETINGS. Association of the Science Teachers of Central Illinois, 55; Central Association of Physics Teachers, 242, 473; National Educational Association, Physical Science, 368; Eastern Association of Physics Teachers, 53, 425, 303; Michigan Schoolmasters' Club—Physics Conference, 186,—Biology Section, 124, 188; Natural Science Association of Ontario, 186; New England Association of Chemistry Teachers, 119, 184, 469; New York Association of Biology Teachers, 49, 185, 421, 469; New York Chemistry Teachers' Club, 118, 419; New York Physics Teachers' Club, 54, 118, 418, 540; New York State Science Teachers' Association—Biology Section, 543—Physical Science Section, 51; State Science Teachers' Association of Indiana, 242; Upper Peninsular Educational Association, 368.
- Research Work, The Value of—in Education. SAMUEL J. SAUNDERS..... 1
- Resolution of Forces, An Experiment in. E. C. WOODRUFF..... 523
- RUNKE, RICHARD. Elements of Agriculture in the High School Course..... 282

S

SAUNDERS, SAMUEL J. The Value of Research Work in Education.....	1
Science Teaching, Method in. LOUIS MURBACH.....	12
Science Teaching Preparatory for the High School. HERBERT BROWNELL.....	251
Science, The Teaching of. WILLIAM HARMON NORTON.....	193
Science Teacher as a Public Benefactor, The. A. C. NORRIS.....	199
SEAMAN, WILLIAM H. How Uncle Sam got a Decimal Coinage.....	233, 292
Secondary School Teacher of Physiology and Hygiene. The Duty of the University to the. W. H. MANWARING.....	153
SMITH, N. F. An Apparatus for Determining the Relation Between Pressure and Boiling Point.....	339
SMITH, WARREN RUFUS. Examination of Baking Powders.....	342
Snail, The European Edible. M. A. BIGELOW.....	405
SOHON, M. D. The Courses in Chemistry and Physics in the New York High Schools	419
Spectrometer, A. JOHN LEMAY.....	32
SPEYERS, C. L. Chemistry in Education.....	70, 133
Standards, The National Bureau of. RUFUS P. WILLIAMS.....	114, 174
STEARNS, HERMAN D. A Diagram Illustrating Uniformly Accelerated Motion, 334; A Simple Method of Measuring the Earth's Magnetic Field.....	527
SUYDAM, V. A. High School Botany.....	435, 500

T

Teaching of Science, Professor Remsen on. LYMAN C. NEWELL.....	129
Telescope, A Skeleton. E. C. WOODRUFF.....	341
TRAYTON GILBERT H. Notes on the Study of Seeds, 237; Shall the Preparation of a Herbarium and the Identification of Species form a Part of the Required Work in our Secondary Schools?.....	80, 148
Tuberculous Sputum in Public Streets. W. H. MANWARING.....	408

V

Value of Research Work in Education, The. SAMUEL J. SAUNDERS.....	1
Vapor Tension, A Demonstration of—at Ordinary Temperature. C. E. LINBARGER	105
VAN HISE, C. R. The Training and Work of a Geologist.....	505
Volumetric Synthesis of Water as a Practical Quantitative Lecture Experiment, The. ERNEST F. BURCHARD.....	460

W

WADDELL, JOHN. The Examination and the Examinee in Elementary Science..	515
WATTS, OLIVER P. A Simple Proof of Nitrogen in Nitric Acid.....	115
Weather Work in the Schools. H. W. HARMON.....	451
What of Chemistry Shall be Taught in the High School and How Shall it be Taught Most Effectively? L. M. DENNIS.....	446
WHITE, WM. F. Teaching the Metric System.....	350
WILLIAMS, RUFUS P. Decadence of the Vulgar Fraction, 41; Improved Method of Applying Test for Nitrates, 301; The National Bureau of Standards, 114, 174; The Planting of Chemistry in America, 75, 139; The Recent Metric Bill..	529
WOODRUFF, E. C. An Apparently Safe Way to Mix Chlorine and Hydrogen, 535; Balance Details, 29; An Experiment in Resolution of Forces, 523; A Mounting for an Oscillating Mirror, 94; Record of the Disruptive Discharge of a Condenser, 179; A Skeleton Telescope, 341; A "Tumbler Galvanometer"....	341

Z

Zoology Teaching in the Secondary Schools of the United States, The History of. MARION R. BROWN.....	201, 256
--	----------